

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Redesignation of the 17.7-19.7 GHz	)	
Frequency Band, Blanket Licensing	)	IB Docket No. 98-172
of Satellite Earth Stations in the	)	RM-9005
17.7-20.2 GHz and 27.5-30.0 GHz	)	RM-9118
Frequency Bands, and the Allocation	)	
of Additional Spectrum in the 17.3-17.8	)	
GHz and 24.75-25.25 GHz Frequency	)	
Bands for Broadcast Satellite-	)	
Service Use	)	

To: The Commission

**COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS**

The Association of American Railroads ("AAR"), by its undersigned counsel, pursuant to section 1.415 of the rules of the Federal Communications Commission ("Commission")<sup>1/</sup> and the Order released November 2, 1998,<sup>2/</sup> hereby submits its comments in response to the above captioned Notice of Proposed Rule Making<sup>3/</sup> concerning the redesignation of the 17.7-19.7 GHz ("18 GHz band") to permit blanket

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<sup>1/</sup> See 47 C.F.R. § 1.415.

<sup>2/</sup> Order, DA 98-2231, (released November 2, 1998) (Granting a "Motion for Extension of Pleading Cycle" in this proceeding. Due dates for filing comments and reply comments extended to November 19, 1998, and December 21, 1998, respectively.)

<sup>3/</sup> IB Docket No. 98-172, Notice of Proposed Rule Making, (FCC 98-235), (released September 18, 1998) ("Notice").

licensing of satellite earth stations on frequency bands currently assigned to the terrestrial fixed services.

AAR is a voluntary, non-profit organization composed of Class I member railroad companies operating in the United States, Canada and Mexico. AAR is the joint representative and agent of these railroads in connection with federal regulatory matters of common concern to the industry as a whole, including matters pertaining to regulation of communications. In addition, AAR functions as the frequency coordinator with respect to operation of land mobile and other radio-based services.

#### **I. SUMMARY OF RAILROAD INDUSTRY POSITION**

AAR recognizes that the Commission is obligated to accommodate -- to the extent possible -- the spectrum needs of emerging new services. In doing so, however, the Commission must take into account the vital spectrum needs of incumbent users. AAR believes that the Commission's proposed 18 GHz band redesignation plan fails to preserve the operational integrity and future spectrum needs of the existing Fixed Service (FS) users in three fundamental ways.

First, the proposed sharing of the 18 GHz band among ubiquitously deployed satellite earth stations and heavily licensed terrestrial fixed services is technically impracticable. Second, the proposed redesignation of the band fails to recognize that fixed service allocations consist of paired frequency assignments, which means that, under the Commission's plan, a fixed microwave system will only be protected from interference for either its transmit or receive frequency, not both. Third, AAR believes that the proposed redesignation of the 18 GHz band to accommodate satellites

services represents a continuing pattern in FCC rulemaking proceedings that favor emerging services over incumbent FS users in a way that is dangerously eroding the spectrum available for critical terrestrial fixed services.

AAR endorses an alternative band segmentation plan offered to the Commission by the Telecommunications Industry Association ("TIA").<sup>4/</sup> In AAR's view, the TIA plan protects the needs of the terrestrial fixed service community, while at the same time provides access to the 18 GHz band for the satellite services. AAR also supports the Comments of the Fixed Wireless Communications Coalition ("FWCC"), which represents the federal communications policy interests of local competitive wireless carriers, manufacturers, service providers, private microwave licensees and their representative associations. The FWCC is filing, under separate cover, in this proceeding Comments that endorse TIA's alternative band redesignation.

## **II. NATURE OF RAILROADS' INTEREST**

As the Commission is aware, the railroad industry makes extensive use of fixed microwave links for the operation and control of train movements.<sup>5/</sup> The North American railroad industry deploys and depends upon a comprehensive and sophisticated network of point-to-point fixed service (FS) microwave systems used to carry voice and data traffic which is integral to the minute-to-minute management and

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<sup>4/</sup> See Comments of the Fixed Point-to-Point Communications Section, Wireless Communications Division of the Telecommunications Industry Association.

<sup>5/</sup> See e.g., Comments of Association of American Railroads in ET Docket No. 95-18, RM-7927, filed March 5, 1995; Railroads' Comments in Response to SkyBridge Application (11 GHz Band), filed December 15, 1997.

control of train movements throughout the rail network.<sup>6/</sup> These FS links are used to interconnect the trackside radio facilities (both mobile and fixed) with the centralized dispatching center in each railroad's operating region. For example, a locomotive traveling on Union Pacific's right-of-way in Nevada is in contact, via mobile radio and FS links, with the Union Pacific centralized dispatch and control center located hundreds of miles away in Omaha, Nebraska; similarly, Jacksonville, Florida is the center of operations for trains on the CSX network, which covers the Southeast, Mid-central and Middle Atlantic regions of the nation.

FS microwave circuits are integral links in this nationwide railroad communications system. These links carry communications to advise of dangerous conditions and, if necessary, bring railroad operations to a halt to prevent unsafe conditions. Radio communications between trains and central dispatchers are essential to protect railroad employees and the general public. Only radio can provide immediate information on the location, direction and speed of hundreds of trains operating at the same time on each major railroad in the country. This information is indispensable to railroad safety. In this regard, a 1994 "Report to Congress" by the Federal Railroad Administration reviewed in detail the various types of railroad communications systems, including those used for train movement and control,

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<sup>6/</sup> See AAR's Comments in ET Docket No. 95-18, filed May 5, 1995; AAR's Reply Comments filed June 21, 1995; and AAR's Response to Comsat's Supplemental Comments filed May 17, 1996.

switching operations, defect detection and emergency response, and concluded that radio communications were an integral part of railroad safety planning and execution.<sup>7/</sup>

These operational and safety uses are absolutely critical to the safe operation of railroads and cannot be jeopardized by interference from other spectrum users, including co-frequency NGSO/FSS and GSO/FSS satellite services. In an analogous setting, the critical nature of the railroads' use of mobile radio frequencies for safety and operational control and management of train movements was recognized explicitly by the FCC in its recent decision in the "refarming" proceeding, wherein the Commission granted special protection to railroad mobile radio channels due to their "quasi-public safety" nature in light of the potential threat of interference from non-railroad land mobile users.<sup>8/</sup> This recognition and protection must also be extended to the fixed links of the railroad radio systems because, as with any radio communications system, the reliability of the railroad industry's integrated mobile and fixed networks is only as good as the system's weakest link. If, having afforded special protection to the railroads' mobile links, the Commission were to allow interference from NGSO/FSS and GSO/FSS satellite services in the 18 GHz band to jeopardize the railroad's FS links,

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7/ Railroad Communications and Train Control, Federal Railroad Administration, Department of Transportation Report to Congress, July 1994 at 22-34 (hereafter FRA Report).

8/ Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them; and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Services, PR Docket No. 92-235, FCC 97-61, Second Report and Order, ¶ 41 (released March 12, 1997) ("Refarming" proceeding).

the Commission would undermine the laudable result it achieved in the "refarming" proceeding.

### **III. DISCUSSION**

As stated above, AAR endorses (and incorporates by reference herein) the Comments of the FWCC and TIA in this proceeding. The following are AAR's independent Comments on the Commission's proposal.

#### **A. Incompatibility Between FS and Satellite Earth Stations Has Already Been Established by the Commission**

The Commission's proposal relies on the premise that incumbent FS systems in the bands to be allocated for ubiquitously licensed satellite earth stations can be "grandfathered" (*i.e.* protected from harmful interference). However, this premise stands in direct conflict with the Commission's stated justification for its entire band redesignation. Specifically, the Commission has found that sharing between FS and ubiquitously licensed satellite earth stations is technically impracticable, and "could have a serious adverse effect on the ability of the terrestrial fixed service to start a new operation or expand in existing operations in a shared band."<sup>9/</sup> For this reason alone, and for the reasons set forth in the FWCC and TIA Comments, the Commission's band plan should not be adopted.

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<sup>9/</sup> Notice at ¶ 19.

**B. Both Transmit and Receive Frequencies Must be Protected from Harmful Interference**

As noted above, the railroad community relies on two-way FS applications. FS allocations in the 18 GHz band require paired frequency allocations to provide two-way service. For example, allocations at 18.58-18.82 GHz are paired with allocations at 18.92-19.16 GHz. This 340 MHz separation paired architecture provides for efficient interference-free, two-way communications. However, under the Commission's proposal, FS access to the 18.92-19.16 GHz band will be secondary to ubiquitously licensed satellite earth stations. And, as noted in the Commission's Notice, FS systems cannot be coordinated on a co-channel basis with satellite receivers.<sup>10/</sup>

The net effect of this proposal is that the entire paired allocation, including the proposed primary allocation at 18.58-18.82, will be useless for future FS use, thereby aggravating the constriction of available FS allocations. The Commission can avoid this undesirable outcome by adopting the recommendations in the TIA proposal that ensure the continued availability of two-way FS communications in the 18 GHz band.

**C. The Commission Must Adopt Policies that Recognize and Affirm the Need for a Vibrant and Sustainable Fixed Service Industry**

In addition to being vitally concerned about the implication of the proposal for NGSO/FSS and GSO/FSS satellite services sharing in the 18 GHz FS band, the

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<sup>10/</sup> See, Notice at ¶ 40. ("We propose that new satellite earth stations will have to coordinate with grandfathered terrestrial fixed service operations, but that, grandfathered terrestrial fixed service licensees would not be allowed to expand or change their current operations in any of the bands in which grandfathering applies in any manner that might increase interference to satellite earth stations.")

railroad industry views the Commission's proposals in this proceeding as a further indication of the growing trend within the Commission to discount the utility and necessity of the terrestrial fixed services, as it searches for spectrum to accommodate the needs of satellite services and new technologies.

The most obvious example of this trend was the Commission's mandate in ET Docket No. 92-9 and ET Docket No. 95-18 to relocate microwave fixed services to make way for new technologies in the 2 GHz band.<sup>11/</sup> A more recent example of adverse pressure being placed on FS allocations is found in the Commission's proceeding regarding the Mobile Satellite Services ("MSS") above 1 GHz,<sup>12/</sup> where the Commission proposed to license MSS co-channel with FS in the 6 GHz band.

AAR recognizes that satellites and new technologies may offer new services for a variety of users, but the promise of these new services make existing fixed services no less vital. Because of the proliferation of new mobile and fixed wireless services, useable spectrum is becoming increasingly congested and the FS users have seen their existing allocations dramatically reduced. This trend cannot continue. As noted above, the railroad community employs FS for a variety of critical rail management and safety-related communications functions. The Commission's goal should be to protect

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11/ See, Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, First Report and Order and Third Notice of Proposed Rule Making, 7 FCC Rcd 6886, 6890 (1992), Second Report and Order, 8 FCC Rcd 6495 (1993); Third Report and Order and Memorandum Opinion and Order, 8 FCC Rcd 6589 (1993).

12/ See, Amendment of parts 2, 25 and 97 of the Commission's Rules with Regard to the Mobile-Satellite Service Above 1 GHz, ET Docket No. 98-142, Notice of Proposed Rule Making, 13 FCC Rcd 17107 (1998).



and preserve existing and future allocations for the FS user community, including those in the 18 GHz band.

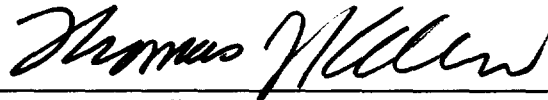
#### **IV. CONCLUSION**

In adopting rules governing the ubiquitous deployment of NGSO/FSS and GSO/FSS satellite earth stations as proposed in this proceeding, the Commission must consider very carefully the potential adverse impact upon existing terrestrial users of the 18 GHz band, especially those operating in safety-critical businesses such as the railroad industry. Accordingly, AAR supports, and urges the Commission to adopt, the alternative band redesignation plan submitted by TIA and endorsed by the FWCC.

Respectfully submitted,

ASSOCIATION OF AMERICAN RAILROADS

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Date: November 19, 1998

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## **CERTIFICATE OF SERVICE**

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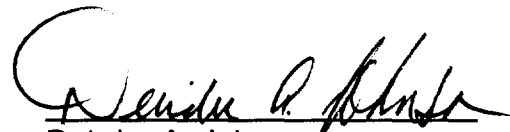
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